

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP02/07513

A. CLASSIFICATION OF SUBJECT MATTER  
Int.Cl<sup>7</sup> H01L23/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
Int.Cl<sup>7</sup> H01L23/12, H01L21/60, H01L23/50, H01L25/04Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Jitsuyo Shinan Koho 1922-1996 Toroku Jitsuyo Shinan Koho 1994-2002  
Kokai Jitsuyo Shinan Koho 1971-2002 Jitsuyo Shinan Toroku Koho 1996-2002

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 9-223705 A (Hitachi, Ltd.), 26 August, 1997 (26.08.97), Column 4, line 29 to column 10, line 31; Figs. 2 to 5	1
A	<u>Column 4, line 29 to column 8, line 17; column 12,</u> <u>line 22 to column 14, line 36; Figs. 11 to 13</u> (Family: none)	2
Y	US 6025640 A (Dai Nippon Insatsu Kabushiki Kaisha), 15 February, 2000 (15.02.00), Column 6, line 33 to column 7, line 48; Figs. 4 to 6 & JP 11-233683 A Column 7, line 47 to column 9, line 13; Figs. 4 to 6	1

 Further documents are listed in the continuation of Box C.  See patent family annex.

* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
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Date of the actual completion of the international search 29 October, 2002 (29.10.02)	Date of mailing of the international search report 12 November, 2002 (12.11.02)
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Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer
Faxsimile No.	Telephone No.

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**C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 7-312404 A (Hitachi, Ltd.), 28 November, 1995 (28.11.95), Column 6, lines 33 to 37; column 8, lines 13 to 21; Figs. 1 to 5 (Family: none)	1-3
E,A	JP 2002-313980 A (Niigata Seimitsu Co., Ltd.), 25 October, 2002 (25.10.02), Column 4, line 5 to column 6, line 7; Figs. 1, 2 (Family: none)	1-3